

UNITED STATES PATENT AND TRADEMARK OFFICE  
**CERTIFICATE OF CORRECTION**

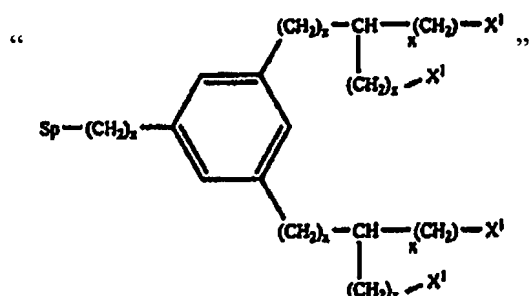
PATENT NO. : 7,094,943 B2  
 APPLICATION NO. : 09/067337  
 DATED : August 22, 2006  
 INVENTOR(S) : Hubert Köster et al.

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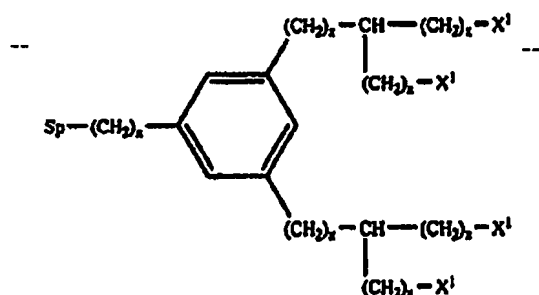
It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

**IN THE SPECIFICATION:**

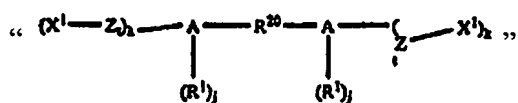
At column 3, lines 60-65, please replace structure



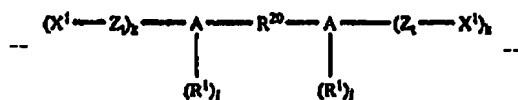
with the following structure



At column 4, line 25, please replace structure



with the following structure



At column 11, line 40, please replace

“-Sp-O—C<sub>6</sub>H<sub>4</sub>(C<sub>6</sub>H<sub>5</sub>)<sub>2</sub>C—OH (—>—Sp-O—C<sub>6</sub>H<sub>4</sub>(C<sub>6</sub>H<sub>5</sub>)<sub>2</sub>C—Cl” with  
 -- -Sp-O—C<sub>6</sub>H<sub>4</sub>(C<sub>6</sub>H<sub>5</sub>)<sub>2</sub>C—OH-->—Sp-O—C<sub>6</sub>H<sub>4</sub>(C<sub>6</sub>H<sub>5</sub>)<sub>2</sub>C—Cl --

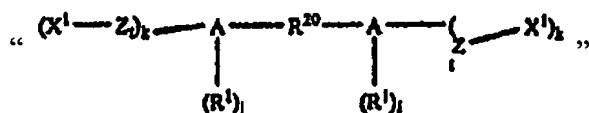
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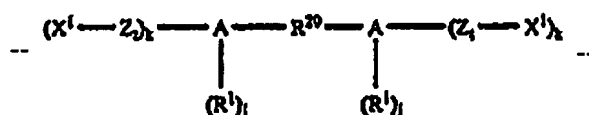
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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

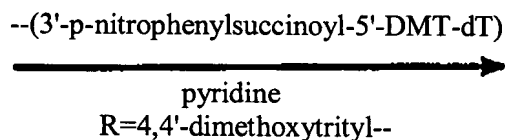
At column 18, line 45, please replace structure



with the following structure



At column 23, line 45, please replace  
 “(3'-p-nitrophenylsuccinoyl-5'-DMT-dT)  
 pyridine  
 R-4,4'-dimethoxytrityl” with



At column 26, line 17, please replace  
 “R-4,4'-dimethoxytrityl” with --R=4,4'-dimethoxytrityl--

At column 26, last line, please replace  
 “R-4,4'-dimethoxytrityl” with --R=4,4'-dimethoxytrityl--

At column 31, line 32, in Table 1 please replace  
 “d(GACGGCCAGT)” with --d(GACGGCCAGT) (SEQ ID No. 1)--

**IN THE CLAIMS:**

Please replace Claims 5, 11 and 17 with the following Claims:

Col. 43, Line 12 should read

5. The LPC of claim 1, wherein Z is any combination of 1-12 units selected from 1,4-phenylene and methylene, which units may be combined in any order, with the proviso that if Z is methylene, then Z contains more than three methylene units.

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It is certified that error appears in the above-identified patent and that said Letters Patent is hereby corrected as shown below:

Col. 43, Line 25 should read

11. A method of solution phase biopolymer synthesis, comprising the steps of:

- (a) reacting an LPC of formula  $(R^1)_p-A-(Z_t-X^1)_n$  with a first monomer  $N^1$ ;
- (b) separating and purifying the product of step (a) to afford a compound of formula  $(R^1)_p-A-(Z_t-X^1-N^1)_n$ ;
- (c) reacting the product of step (b) with a second monomer  $N^2$ , a dimer  $N^2-N^3$  or a trimer  $N^2-N^3-N^4$ ; and
- (d) repeating steps (b) and (c) to produce an LPC-bound biopolymer of formula  $(R^1)_p-A-(Z_t-X^1-N^1-N^2-...-N^m)_n$ , where m is 3 to 100, wherein:

A is silicon;  $R^1$  is hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl or heterocyclylalkyl; p is 0 or 1;

Z is any combination of 0-12 units selected from 1,2-, 1,3- or 1,4-phenylene and alkylene, which units may be combined in any order; t is 0 or 1;

$X^1$  is a reactive group that effects the biosynthesis of biopolymers from monomers to produce biopolymers selected from the group consisting of polypeptides, oligonucleotides, peptide nucleic acids and oligosaccharides;

n is 3 or 4, with the proviso that if Z is methylene, then Z contains more than three methylene units;

$R^1$ ,  $X^1$ , and Z are unsubstituted or substituted with one or more substituents each independently selected from Q;

Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkoxycarbonylalkyl, aryloxycarbonyl, aryloxycarbonylalkyl, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, arylaminocarbonyl, diarylaminocarbonyl, arylalkylaminocarbonyl, alkoxy, aryloxy, perfluoroalkoxy, alkenyloxy, alkynyloxy, arylalkoxy, amino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl, diarylaminoalkyl, alkylamino, dialkylamino, arylamino, diarylamino, alkylaryl amino, alkylcarbonylamino, alkoxycarbonylamino, arylcarbonylamino, aryloxycarbonylamino, azido, alkylthio, arylthio, perfluoroalkylthio, thiocyno, isothiocyno, alkylsulfinyl, alkylsulfonyl, arylsulfinyl, arylsulfonyl, aminosulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, arylaminosulfonyl or diarylaminosulfonyl;

$N^1$ ,  $N^2$ ,  $N^3$ ... $N^m$  are biopolymer monomers; and  
the dimers and trimers comprise the monomers.

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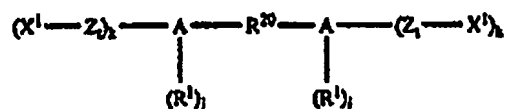
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Col. 44, Line 20 should read

17. A liquid phase carrier (LPC) that has formula:



wherein:

A is silicon; R<sup>1</sup> is hydrogen, alkyl, aryl, aralkyl, heteroaryl, heteroaralkyl, heterocyclyl or heterocyclylalkyl;

Z is any combination of 1-12 units selected from 1,2-, 1,3- or 1,4-phenylene and alkylene, which units may be combined in any order; t is 0 or 1;

X<sup>1</sup> is a reactive group that effects the biosynthesis of biopolymers from monomers to produce biopolymers are selected from the group consisting of polypeptides, oligonucleotides, peptide nucleic acids and oligosaccharides;

R<sup>1</sup>, X<sup>1</sup>, and Z are unsubstituted or substituted with one or more substituents each independently selected from Q;

Q is halogen, hydroxy, nitrile, nitro, formyl, mercapto, carboxy, alkyl, haloalkyl, polyhaloalkyl, aminoalkyl, diaminoalkyl, alkenyl containing 1 to 2 double bonds, alkynyl containing 1 to 2 triple bonds, cycloalkyl, cycloalkylalkyl, aryl, heteroaryl, arylalkyl, heteroarylalkyl, alkylidene, arylalkylidene, alkylcarbonyl, arylcarbonyl, heteroarylcarbonyl, alkoxycarbonyl, alkoxycarbonylalkyl, aryloxy carbonyl, aryloxy carbonylalkyl, aminocarbonyl, alkylaminocarbonyl, dialkylaminocarbonyl, arylaminocarbonyl, diarylaminocarbonyl, arylalkylaminocarbonyl, alkoxy, aryloxy, perfluoroalkoxy, alkenyloxy, alkynyloxy, arylalkoxy, amino, aminoalkyl, alkylaminoalkyl, dialkylaminoalkyl, arylaminoalkyl, diarylaminoalkyl, alkylamino, dialkylamino, arylamino,

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diaryl-amino, alkylaryl-amino, alkylcarbonyl-amino, alkoxycarbonyl-amino, arylcarbonyl-amino, aryloxy-carbonyl-amino, azido, alkylthio, arylthio, perfluoroalkylthio, thiocyno, isothiocyano, alkylsulfinyl, alkylsulfonyl, arylsulfinyl, arylsulfonyl, aminosulfonyl, alkylaminosulfonyl, dialkylaminosulfonyl, arylaminosulfonyl or diarylaminosulfonyl;

R<sup>20</sup> is alkylene, alkenylene, alkynylene, arylene or heteroarylene;

k is 2 or 3; and

j is 0 or 1.

Signed and Sealed this

Eleventh Day of September, 2007



JON W. DUDAS  
*Director of the United States Patent and Trademark Office*